

SOIL AND WATER APPENDIX

WATERSHED MANAGEMENT

Special practices required to control erosion and protect water quality will be prescribed for oil and gas case-by-case through on-site investigations during the application for permit to drill process.

Reclamation plans established according to present and developed guidelines will be required for existing fields and wellsites. The objectives of the reclamation plans will be to reduce the amount of bare ground caused by past oil and gas development, to control surface water runoff, and to dispose properly of produced water. Construction and reclamation techniques and procedures would be monitored to quantify the effects of these plans. As management plans or rangeland improvements are developed, watershed concerns related to project construction will be addressed. Old, unreclaimed disturbance will be inventoried and reclaimed. Reclamation will be prescribed case-by-case and monitored to evaluate the effects of the reclamation used.

Rehabilitation of fire lines and areas disturbed through the use of heavy equipment for fire suppression, will begin towards the end of a fire or immediately after. Heavy equipment is highly effective in fire suppression but use of this equipment can cause considerable surface disturbance which can lead to accelerated soil erosion and sedimentation of streams. Many of the potential impacts to the soil and water resource can be mitigated early on using heavy equipment while it is still on site at the fire for rehabilitation work. Reseeding of these disturbed areas may be required. Annual evaluations with possible additional rehabilitation work recommendations will be made until satisfactory reclamation is achieved.

Critical Watersheds

In accordance with the Memorandum of Understanding between the BLM and the State of Montana, Department of Health and Environmental Sciences, Water Quality Bureau, an annual report is prepared by BLM and submitted to the Water Quality Bureau and the Environmental Protection Agency. This report focuses on specific water quality problems and presents a proposed action plan to solve the problems. Where appropriate, the report identifies the site, presents a problem description, and the best management practice to remedy the problem. It also provides a time schedule for implementation of the solutions. Due to the mixed landownership patterns, cooperative effort is usually needed to solve problems in an entire watershed. BLM will

assist in cooperative approaches toward basin-wide water quality objectives. The following watershed areas have been identified as needing continued or improved management and monitoring; included are the actions taken in 1992.

CHERRY CREEK

Cherry Creek, a tributary to the Yellowstone River (segment 42M002), is located entirely in Prairie County and is approximately 384 square miles in size. Forty-eight percent of the drainage is public land. This watershed has soil, water, wildlife, riparian, grazing and recreational values. A Memorandum of Understanding has been signed with other federal and state agencies and private landowners. The objective of this Memorandum of Understanding is to develop a cooperative watershed plan which will identify and implement standard operating procedures to maintain and improve the water quality within the watershed. An intensive monitoring program on the Cherry Creek Watershed will be undertaken to determine what practices are necessary to achieve overall improvement in the watershed. Five monitoring stations have been established. Other sites will be monitored on a limited term basis to further delineate potential problem areas. Beneficial uses of warmwater aquatic life are not being met. Beneficial water uses for livestock, wildlife, and irrigation are threatened in the lower 16 miles of this stream. Low flows are due to degradation of most riparian areas and poor hydrologic conditions of the associated upland rangelands. The BLM has entered into an agreement with the Montana Bureau of Mines and Geology to predict long-term salinity in the proposed Cherry Creek Dam based on intermixing of ground water, surface water, and evaporative residuals. There is a continuous recording stream gaging station in place approximately three miles above Cherry Creek's confluence with the Yellowstone River. BLM will continue to fund the operation of the U.S. Geological Survey gage. Streamflow and sediment are monitored at this location.

CUSTER CREEK

Custer Creek, a tributary to the Yellowstone River (segment 42KJ001), is located in Custer and Prairie counties. Landownership is public, private and state. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values. Some cooperative management with the private landowner, Montana Department of Fish, Wildlife and Parks, Ducks Unlimited, Soil Conservation Service and

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Soil and Water

BLM has been implemented. The creek had previously been identified as having a high sediment rate. A Great Plains contract is being developed through the Soil Conservation Service which will improve water quality on Custer Creek. The contract will implement a grazing system that isolates the riparian areas of Custer Creek into a single pasture. It will also provide water sources away from the creek bottom. Most of the high sediment load in Custer Creek is the result of geologic erosion from badlands in the headwaters.

CABIN CREEK

Cabin Creek is located in Dawson, Fallon, Prairie, and Wibaux counties. Cabin Creek is a tributary of the Yellowstone River. Landownership is public, private, and state. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values. The watershed is within a portion of a major oil field. Some grazing and watershed improvements have been implemented.

CEDAR CREEK

Cedar Creek, a tributary to the Yellowstone River (segment 42M002), is located in Dawson, Prairie and Wibaux counties. Landownership is public, private, and state. The BLM constructed several reservoirs (approximately 20 years use) on public land at the lower end of this watershed to control runoff and provide livestock and wildlife watering. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values. The creek has partial impairment of warmwater aquatic life, public water supply, and agriculture (irrigation, stock water) due to sulfates, total dissolved solids and suspended sediment contributed from agriculture practices and natural processes. The watershed is within a portion of a major oil field. There is water flowing from a pipe from the base of a pad upon which a tank battery is located. Once a location is determined for this tank battery, the owners of the battery will be queried as to its source and use. The water may be production water discharge, water used for lubrication/priming or may be for stock watering. If it is production waters, the water will be analyzed, and appropriate action taken.

O'FALLON CREEK

O'Fallon Creek, (segment 42L001), is located in Custer, Fallon, and Prairie counties. O'Fallon Creek is a tributary of the Yellowstone River. Landownership is public, private, and state. There are small blocks of public land within the watershed. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values. There is

concern for water quality due to livestock concentration along the creek. Livestock impacts are adding to beneficial use impairment of warmwater aquatic life, public water supply, and agricultural uses. Monitoring began in 1993 and procedures will be formulated to address these problems.

The creek flows near livestock handling and holding facilities based on private land. The creek exits private land and flows across public land. An allotment management plan is in the process of being developed which will include fences to keep stock further away from the creek on public land. Some grazing improvements have been implemented.

PENNEL CREEK

Pennel Creek, a tributary of O'Fallon Creek (segment 42L001), is located in Custer and Fallon counties. The majority of landownership is private, intermingled with public and state. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values. Pennel Creek is within a portion of a major oil field. There is concern due to oil field development and discharge of production waters. The creek has partial impairment of agricultural use due to moderate levels of total dissolved solids. Monitoring production waters will determine what corrective actions may be necessary, as an onsite review will determine the source of the contamination. Geologic erosion is no longer considered a problem in Pennel Creek, above O'Fallon Creek.

POWDER RIVER

Powder River is located in Custer and Prairie counties. The Powder River is a tributary of the Yellowstone River. Landownership is private, public, and state. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values. Some of the tributaries contain high volume spring areas with riparian values (Ten Mile Creek). The state of Montana has identified the Powder River watershed as an area to maintain or improve water quality.

MUSSELSHELL RIVER

Musselshell River is located in Garfield and Rosebud counties. The Musselshell River is a tributary of the Missouri River (Fort Peck Reservoir). Landownership is private, public, and state. This watershed contains soil, water, wildlife, riparian, grazing, and recreational values and is within portions of major oil fields. The state of Montana has identified the Musselshell River watershed as an area to maintain or improve water quality.

BIG SHEEP MOUNTAIN

Big Sheep Mountain is located in Prairie County and is the highest elevation point (3,600 feet above sea level) in the planning area. Big Sheep Mountain is also the beginning of some high-value watersheds such as Cherry Creek, Timber Creek, and Lisk Creek. Landownership in the Big Sheep Mountain area is private, public, and state. This area contains soil, water, wildlife, riparian, grazing, recreational, and cultural resource values. Some of the riparian values are associated with unique, high-volume spring areas.

Timber Creek is located in Prairie, Garfield, and McCone counties and is a tributary of Big Dry Creek which is a tributary of the Missouri River (Fort Peck Reservoir). Lisk Creek is located in Prairie and McCone counties and is a tributary of the Redwater River which is a tributary of the Missouri River with its confluence well below Fort Peck Reservoir.

MISSOURI RIVER BREAKS

Missouri River breaks is located in McCone County below Fort Peck Dam. This is the area that is described as the south bank of the river starting at Fort Peck Dam and including the area from this point to 12 miles downstream. The tributaries to the Missouri River in this area drain from rugged terrain which contain high water, wildlife, riparian, and recreational values. The Missouri River breaks is an area of high geologic erosion so in some areas has marginally productive soils. Many of the riparian values are associated with high volume springs that strongly influence the riparian characteristics of the drainages. Landownership is private, public, and state.

Other Watersheds

The remaining streams listed in the State of Montana 1992 305(b) report will not be managed as critical watersheds. Mizpah Creek and Little Powder River and their tributaries are outside of the area planned for in this document, as are the tributaries of the Powder River below the Little Powder River. BLM has no control (land) along the following streams: Bennie Peer Creek, Crane Creek, First Hay Creek, Fourmile Creek, Lone Tree Creek, O'Brien Creek, Beaver Creek, Butte Creek, Medicine Lake and Poplar River. Fox Creek, Glendive Creek, Muster Creek, Sand Creek, Sandstone Creek, Smith Creek, Sundry Creek, Big Muddy Creek, East Fork of Charlie Creek, Prairie Elk Creek, and the Yellowstone and Redwater rivers have so little public land that BLM management attention would have no effect. In order to improve or have an effect in these areas, BLM would need more control.

Water Management in Recreation Areas

Drinking water at BLM facilities, such as campgrounds, picnic grounds, trailheads and visitor centers, would meet water quality standards for consumptive use. The following are prohibited: washing of any personal property, fish, animal, or food. In developed recreation areas, the disposing of waste will be in authorized areas.

An inventory of the location of designated potable water supplies on public lands must be prepared and maintained, documenting dates and results of water quality tests and related information when making analyses and interpretations with respect to potable water systems. The standards for water quality testing frequency, contamination levels (bacteriological, chemical, physical) and data documentation standards are provided by the Environmental Protection Agency, state, and local health departments.